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7590

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EXAMINER

HOMAYOUNMEHR, FARID

ART UNIT

PAPER NUMBER

2132

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,046	SONG, DONGHO	
	Examiner	Art Unit	
	Farid Homayounmehr	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-77 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims 1-77 have been examined.

Information Disclosure Statement PTO-1449

1. No Information disclosure statement was submitted by the applicant.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1 to 4 and 6 to 77 are rejected under 35 U.S.C. 102^e(~~b~~) as being anticipated by Jooste (U.S. Patent No. 6941470, filed April 7, 2000 and published September 6, 2005).

- 3.1. As per claim 1, Jooste is directed to a system for protecting a file system of a computer (column 6 line 10 to 14), comprising: an interface operable to receive a selection of an item of the file system to be included in a safety zone (Fig. 4 method 400

as described in column 8 line 13 to 23); a memory in communication with the interface and operable to store information relating to the item (Fig. 3 item 317 described in column 6 line 13 to 23); and a processor in communication with the memory and operable to intercept a system call which potentially could affect the item in the safety zone, and to process the system call to avoid permanent modification of the item (Fig. 3 item 301 as described in column 6 line 23 to 65). Note that Jooste teaches a system or method of protection against unauthorized modification of computer resources (files). While applications (executable files) are used as an example to describe the invention, Jooste clearly indicates that the invention is also applicable to protection of any type of file (column 8 line 48 to 51, and column 7 line 15 to 32).

3.2. As per claim 2, Jooste is directed to the system of claim 1, wherein the processor is operable to examine a composition, information structure, and normal status of the file system (column 8 line 22 to 28 and line 61 to 66).

3.3 As per claim 3, Jooste is directed to the system of claim 1, wherein the processor is operable to cause the computer to only boot from a hard disk drive of the computer. Boot source can be configured in Microsoft Widows Operating Systems (column 5 line 48 to 60).

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3.4. As per claim 4, Jooste is directed to the system of claim 1, wherein the safety zone comprises at least one of a file system, a drive, a directory, a file, or a registry for the computer (Fig. 3 item 317 and column 6 line 10 to 23).

3.5. As per claim 6, Jooste is directed to the system of claim 1, wherein the processor is operable to present a user of the computer with an impression that the system call was executed even when the system call actually has not been executed (column 6 line 30 to 65).

3.6 As per claim 7, Jooste is directed to the system of claim 1, wherein the processor is operable to make the item transparent to a user of the computer. Microsoft Windows Operating Systems allows a user to hide his files from being viewed by other users. Windows is one of the Operating Systems suggested by Jooste to build the system (column 5 line 48 to 60). Hiding files of a user from being viewed by other users is one of the features inherent to Windows.

3.7. As per claim 8, Jooste is directed to a method of protecting and recovering a file system in a computer (column 6 line 10 to 14), comprising the steps of:
storing file system information obtained from examining an operating system and a file system structure in the computer (column 8 line 10 to 27);

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setting a safety zone based on selection of a target that is to be protected or recovered (Fig. 3 and column 6 line 9 to 22), wherein selection is made in response to input by an authenticated administrator (column 8 line 12 to 22);

receiving a system call referencing a file pathname corresponding to the target (Fig. 3 item 301 and column 6 line 15 to 22);

analyzing the system call to determine if the system call affects the target (column 6 line 22 to 25);

and if said system call may affect the target, performing processing to avoid permanent modification of the target (column 6 line 27 to 65).

3.8. As per claim 9, Jooste is directed to the method of claim 8, wherein performing processing comprises creating a copy of the target (column 7 line 32 to 48).

3.9. As per claim 10, Jooste is directed to the method of claim 8, wherein performing processing comprises making the target transparent to a user of the computer.

Microsoft Windows Operating Systems allows a user to hide his files from being viewed by other users. Windows is one of the Operating Systems suggested by Jooste to build the system (column 5 line 48 to 60). Hiding files of a user from being viewed by other users is one of the features inherent to Windows.

3.10 As per claim 11, Jooste is directed to the method of claim 8, wherein performing processing comprises making the system call void (column 6 line 31 to 35).

3.11. As per claim 12, Jooste is directed to the method of claim 8, comprising verifying a booting media for the computer to prevent use of abnormal booting media. Boot source can be configured in Microsoft Windows Operating Systems (column 5 line 48 to 60).

3.12. As per claim 13, Jooste is directed to the method of claim 12, wherein the abnormal booting media comprises a floppy disk or a CD-ROM drive (see response to claim 12).

3.13. As per claim 14, Jooste is directed to the of claim 8, further comprising examining a composition, information structure, and normal status of the file system (column 8 line 10 to 27 and column 8 line 60 to column 9 line 9).

3.14. As per claim 15, Jooste is directed to the method of claim 8, wherein the stored file system information comprises original file system information, and further comprising: comparing the original file system information with current file system information; and replacing the original file system information with the current file system information if the original file system information and the current file system information are not identical (column 7 line 33 to 48 and column 12 line 2 to 7).

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3.15. As per claim 16, Jooste is directed to the method of claim 8, wherein the target comprises at least one of a file system, a drive, a directory, a file, or a registry of the computer (Fig. 3 item 317 and column 6 line 10 to 23).

3.16. As per claim 17, Jooste is directed to the method of claim 8, wherein the system call is for creating a target and wherein performing processing comprises: creating the target; and updating current file system information to show that the target has been created (column 6 line 50 to 66).

3.17. As per claim 18, Jooste is directed to the method of claim 8, wherein the system call is for deleting a target and wherein performing processing comprises: when the target has not already been deleted, copying the target for recovery; and updating current file system information to show that the target has been deleted. As indicated in column 6 line 22 to 67, all unauthorized I/O requests are redirected to alternate environment, and won't affect the protected environment. In case of an unauthorized I/O request, the response will be based on the state of the alternate environment. Therefore, in response to an unauthorized delete request, the response will be from the alternate environment, which will confirm the deletion, and the protected environment will save a copy for later recovery (see also column 12 line 2 to 7).

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3.18 As per claim 19, Jooste is directed to the method of claim 18, further comprising: when the target has already been deleted, voiding the system call (see response to claim 18).

3.19. As per claim 20, Jooste is directed to the method of claim 8, wherein the system call is for renaming a target and wherein performing processing comprises: when the target has not already been renamed, copying the target for recovery; and updating current file system information to show that the target has been renamed (see response to claim 18).

2.20. As per claim 21, Jooste is directed to the method of claim 20, wherein the system call is for renaming a target and wherein performing processing comprises: when the target has already been renamed, voiding the system call (see the response to claim 18).

3.21. As per claim 22, Jooste is directed to the method of claim 8, wherein the system call comprises searching for a target and further comprising: searching for the target using the current file system information (similar to the response to claim 10, search is a function performed by Windows operating system. When a system call from and unauthorized user is received, the alternate environment (current file system) will be searched).

3.22. As per claim 23, Jooste is directed to the method of claim 22, further comprises: searching for the target if the target is marked with renew, rename, or delete. As indicated in column 9 line 10 to 65, the protected execution agent keeps track of all subsequent unauthorized I/O calls and redirects the calls to the alternate environment. Therefore, Jooste discloses marked targets. The result of a search for marked targets will be based on the alternate environment. Therefore, if the target is deleted, renamed, or renewed in the alternate environment, the result of search will be returned according to alternate environment. On the other hand, in case of recovery (which must be performed by an authorized user), the result of a search query will be based on the state of the protected environment, and will show the original files without modifications made by the unauthorized user.

3.23. As per claim 24, Jooste is directed to the method of claim 8, further comprising: recovering the target (column 7 line 32 to 48 and column 12 line 2 to 7).

3.24. As per claim 25, Jooste is directed to the method of claim 24, wherein the target is recovered by comparing the stored file system information to current file system information. Jooste discloses the stored file system by the protected environment and current file system by alternate environment. All recovery methods using a copy of the original data is disclosed.

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3.25. As per claim 26, Jooste is directed to the method of claim 24, wherein the target is recovered by renaming a stored copy of the target (see response to claim 25).

3.26. As per claim 27, Jooste is directed to the method of claim 8, wherein performing processing comprises preventing access to the target (As indicated in column 6 line 30 to 65, unauthorized applications cannot affect the protected environment).

3.27. As per claim 28, Jooste is directed to the method of claim 8, wherein the system call is for an interrupt and wherein processing further comprises: voiding the system call if processing the interrupt would affect partition information of the file system (if the interrupt call is from an unauthorized user, the call will be voided with no change to protected environment (column 6 line 30 to 35)).

3.28. Claim 29 is substantially the same as claim 8. See response to claim 8.

3.29. As per claim 30, Jooste is directed to the method of claim 29, further comprising updating file system information on a data storage device coupled to the computer with file system information from a disk drive coupled to the computer (Fig. 2 column 5 line 1 to 30 and claims 21 and 22).

3.30. Claims 31 to 54 are substantially the same as claims 8 to 28 above.

3.31. Claim 55 is substantially the same as claim 8. See response to claim 8.

3.32. As per claim 56, Jooste is directed to the method of claim 55, further comprising: authenticating the administrator. Microsoft Windows Operating Systems comes with a function to authenticate users, and particularly a system administrator (column 5 line 48 to 60).

3.33. As per claim 57, Jooste is directed to the method of claim 56, further comprising: receiving authorization information from the administrator; and comparing the received authorization information to stored authorization information to determine whether to authenticate the administrator (see claim 56 above).

3.33. As per claim 58, Jooste is directed to the method of claim 55, wherein the item is a first item, further comprising: receiving a selection of a second item to be included in an open zone from an administrator. Jooste's method allows configuration of protected environment to include any area in the file system. Therefore, it discloses the open zone within the safety zone.

3.34. As per claim 59, Jooste is directed to the method of claim 58, wherein the second item may be permanently modified (items in the open area are configured such that no authorization for modification will be required).

3.25. As per claim 60, Jooste is directed to the method of claim 58, wherein the item is a first item, further comprising: receiving a selection of a second item to be protected from an administrator (following the response to claim 58 above, configure the open area such that the modification by the administrator is unauthorized).

3.26. As per claim 61, Jooste is directed to the method of claim 60, further comprising: restricting user access to the second item (see response to claim 58 above).

3.27. As per claim 62, Jooste is directed to the method of claim 55, wherein the item is stored as an original item, and wherein performing processing comprises: creating a copy of the original item; storing the copy for recovery; and allowing a user to access the original item (column 12 line 2 to 7).

3.28. As per claim 63, Jooste is directed to the method of claim 55, wherein performing processing comprises making the item transparent to a user of the computer (see response to claim 35).

3.29. As per claim 64, Jooste is directed to the method of claim 55, wherein performing processing comprises making the system call void (see response to claim 11).

3.30. As per claim 65, Jooste is directed to a computer-readable storage medium storing a computer program executable by one or more computers, the computer

program comprising computer instructions for: receiving a selection of an item to be included in a safety zone; intercepting a system call which potentially could affect the item in the safety zone; and performing processing responsive to the system call so that the item is not permanently modified (see response to claim 8).

3.31. As per claim 66, Jooste is directed to the computer-readable storage medium method of claim 65, wherein performing processing further comprises instructions for voiding the system call (see response to claim 11).

3.32. As per claim 67, Jooste is directed to the computer-readable storage medium method of claim 66, wherein performing processing further comprises providing instructions for providing a user of the computer with an impression that the system call was executed (see the response to claim 6).

3.33. As per claim 68, Jooste is directed to the computer-readable storage medium method of claim 65, wherein performing processing further comprises instructions for: determining that the system call is a find file request; and if execution of the find file request would access an item in a safety zone, performing the find file request without accessing the file system (as described in column 6 line 30 to 65, any unauthorized access operation to a file in the protected environment (safety zone) will be performed without accessing to the safety zone).

3.34. As per claim 69, Jooste is directed to the computer-readable storage medium method of claim 65, further comprising instructions for verifying a booting media for the computer to prevent use of abnormal booting media (see response to claim 12).

3.35. As per claim 70, Jooste is directed to the computer-readable storage medium method of claim 65, further comprising instructions for: storing original file system information; at a later time, comparing the stored original file system information with current file system information; and replacing the original file system information with the current file system information if the original file system information and the current file system information are not identical (see response to claim 39).

3.36. As per claim 71, Jooste is directed to the computer-readable storage medium method of claim 65, wherein the system call is for creating an item and wherein performing processing further comprises instructions for: creating the item; and updating current file system information to show that the item has been created (see the response to claim 17).

3.37. As per claim 72, Jooste is directed to the computer-readable storage medium method of claim 65, wherein the system call is for deleting an item and wherein performing processing further comprises instructions for: when the item has not already been deleted, copying the item for recovery; and updating current file system information to show that the item has been deleted (see the response to claim 18).

3.38. As per claim 73, Jooste is directed to the computer-readable storage medium method of claim 65, wherein the system call is for renaming an item and wherein performing processing further comprises instructions for: when the item has not already been renamed, copying the item for recovery; and updating current file system information to show that the item has been renamed (see the response to claim 20).

3.39. As per claim 74, Jooste is directed to the computer-readable storage medium method of claim 65, further comprising instructions for recovering items in the safety zone (see claim 20).

3.40. As per claim 75, Jooste is directed to the computer-readable storage medium method of claim 74, wherein the item is recovered by renaming a stored copy of the item (see response to claim 25).

3.41. As per claim 76, Jooste is directed to the computer-readable storage medium method of claim 65, wherein performing processing further comprises instructions for preventing access to the item (see response to claim 27).

3.42. As per claim 77, Jooste is directed to the computer-readable storage medium method of claim 65, wherein the system call is for an interrupt and wherein processing

further comprises instructions for: voiding the system call if processing the interrupt would affect partition information of the file system (see the response to claim 28).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jooste as applied to claim 1 above, and further in view of Bowlin (U.S. Patent Application Publication No. 2002/0099944 A1, published July 25, 2002).

5.1 As per claim 5, Jooste is directed to the system of claim 1. Jooste specifies an interface to configure the safety zone, but it does not include the specific operation of presenting information about the safety zone. Bowlin teaches the use of a graphical user interface to indicate the files selected for protection in the safety zone (Fig. 6).

Jooste and Bowlin are analogous art because they both specify a method to protect computer files from unauthorized modification.

At the time of invention, it would have been obvious to a skilled person in the art to incorporate the interface as disclosed by Bowlin in the system of Jooste, to show the list of files in the safety zone.

The motivation to do so would have been to allow the system administrators to see the files included in safety zone and make proper adjustments if necessary.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farid Homayounmehr whose telephone number is 571 272 3739. The examiner can normally be reached on 9 hrs Mon-Fri, off Monday biweekly.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571) 272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

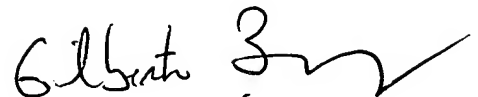
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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Farid Homayounmehr

Examiner

Art Unit: 2132



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